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ABSTRACT

This report contains the results of the second year (1975-76) of a five year longitudinal study to determine the effectiveness of Title I programs for disadvantaged students in Seattle, Washington's Public Schools. The report attempts to identify Title I student characteristics and determine which educational variables affect academic performance. Research and evaluation focused on the following issues: (1) student and program characteristics; (2) achievement test score pattern; (3) reading and math achievement by program; (4) transfer of learning from compensatory education to regular classroom programs; (5) the effect of socioeconomic and population characteristics on academic achievement; and (6) instructional variables related to the success of Title I students. A summary of findings, conclusions, and recommendations provides a brief synopsis of the major results and implications of the study. (Author/APM)

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A SECOND YEAR STUDY OF THE EDUCATIONAL AND DEMOGRAPHIC FACTORS THAT AFFECT THE READING AND MATHEMATICS PERFORMANCE OF TITLE I STUDENTS

REPORT NO. 77-1
JANUARY, 1977

JAMES R. MARCHISIO
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Department of
Management Information Services

SEATTLE
PUBLIC
SCHOOLS

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ABSTRACT

This report contains the results of the second year (1975-76) of a five year longitudinal study to determine the effectiveness of E.S.E.A. Title I programs for disadvantaged students in Seattle Public Schools. This report deals exclusively with results from this year only; longitudinal findings will be presented in a subsequent report. The intent of this study is to identify Title I student characteristics, and determine which educational variables affect students' academic performance.

The following conclusions are evident from information contained in this report:

1. The Title I student population totaled 5,662, with 2,596 students receiving Reading instruction, 1,606 receiving Math, and 1,460 receiving Reading and Math instruction. Compared to the Districtwide ethnic distribution, minority groups were over-represented.

2. The Reading programs showing the largest MAT mean percentile gains were Allen, Green Lake, King, McGilvra, and West Woodland; programs that showed losses in the mean percentile scores were Graham Hill, Sanislo, Blessed Sacrament and St. Alphonsus.

3. Math programs that showed the largest MAT mean percentile gains included McGilvra, Oak Lake, West Woodland, Blessed Sacrament, and Guadalupe; programs showing the lowest mean percentile scores were Cooper, Fairmount Park, Gatzert, Madrona, Muir, Roxhill, Stevens, Wing Luke, Meany, Mercer, Sanislo, and Wilson.

4. The most successful public school Title I Reading programs, after eliminating the effects of grade, ethnic group, and pre-test, were King and McGilvra; the least successful were Brighton and Sanislo.

5. After eliminating the effects of grade, ethnic groups, and pre-test, the most successful public school Title I Math programs were King and West Woodland; the least successful were Green Lake and Sanislo.

6. Based on unadjusted mean percentile gain scores, the most successful non-public school Title I Reading program was St. Edward; the least successful was Blessed Sacrament.

7. Based on unadjusted mean percentile gain scores, the most successful non-public school Title I Math programs were Blessed Sacrament and Guadalupe; the least successful were St. Catherine and St. Mary.

8. Greatest mean percentile gains were made by Reading students in the early grades, specifically, second and third grade.

9. Eighth grade students showed slightly higher Math mean percentile gains than students in other grades; however, elementary students at the second, third, and fourth grade levels show higher gains more consistently than do secondary students.

10. Using report card grades as a measure, Title I students had somewhat higher academic grades than did a comparable non-Title I group of students.

11. Variables that deal with teacher involvement, such as Percent Structured Oral Drill, Percent Learning Games, Percent Flashcards, Percent Small Group with Direct Instruction, and Percent Audio Tapes/Records in Reading, and District Precision Measurement Courses, Percent Individualized Instruction, Graduate Reading Courses, Number of OCP Monthly Workshops Attended by Teacher, Percent Small Group with Direct Instruction and Percent Discussion in Math, had a positive effect in producing higher MAT post-test scores.

12. Instructional strategies emphasizing teacher involvement, such as Structured Drill or Presentation in Reading and Precision Measurement and Structured Drill or Presentation in Math, contributed the most toward higher MAT post-test scores.

Refer to the Summary of Findings, Conclusions and Recommendations section for recommendations made based on the data presented in this report.

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INTRODUCTION

Background Information

Within the Seattle School District there has been a wide variety of Federally funded ESEA Title I programs aimed at remediating basic skills deficiencies of underachieving students. During the 1974-75 school year, a five-year longitudinal study was implemented to assess the overall Districtwide effectiveness of the Title I programs. The first year of the study (Reports No. 75-25 and 76-2) established data on characteristics and performance of participating students. It also took an initial look at achievement gains and educational variables that affect Title I students.

This report contains analysis of data from the second year (1975-76). It defines more precisely the student population and the characteristics of each Title I program. It deals with identifying which of the educational variables most affect the Title I student, based on achievement gains.

Questions of Interest

This report is based on the following general Questions of Interest:

1. What are the effects of participation in Title I programs on students' academic achievement?

2. What are the effects of socio-economic and population characteristics on academic achievement?

3. Is there any transfer of learning from the compensatory programs to the regular classroom programs?

4. What instructional variables and strategies are currently used in Title I programs?

5. Is there any variable or strategy that seems more successful for Title I students?

6. Which Title I programs are most effective?

Overview of Report

The Results section contains the research and evaluation questions developed from the questions of interest and explains the statistical

procedure employed in analyzing the data to address each. Data are presented and discussed for each specific research question.

The Summary of Findings, Conclusions, and Recommendations provides a brief synopsis of the major results and implications of the study.

Methodology descriptions of the program and school variables, curricula and treatments, student information and tests, as well as limitations of the study, may be found in Appendix A.

RESULTS

Research and Evaluation Question #1: Title I Student and Program Characteristics

What are the characteristics of the student population of each Title I program in the Seattle School District? Further, what are the characteristics of each elementary, middle school, and junior high school Title I program in the Seattle School District?

Design

Student information files were established from class lists that teachers submitted to the Evaluation Office. Data from individual student master file records, which were compiled to develop a student profile for each program, included the following characteristics: sex, ethnic distribution, the percentage of poverty in the census tract in which each student lives, grade, and the levels of achievement on the Fall, 1975 Metropolitan Achievement Test (MAT). Information obtained from the class lists was the total number of students enrolled in the school's Title I program, including the number of students receiving Reading and/or Math instruction, and the percent of student mobility for each program. The student mobility was computed by dividing the number of students who moved or left the program for a reason other than "remediation no longer needed" or "end of year" by the total number of students enrolled in the program.

The cost per student was determined by dividing the total Title I allocation by the number of students enrolled in the program.

The mean percentile of MAT scores for each school's grade levels and the number of students in the lower three stanines are based on the Fall, 1975 test administered to students receiving Reading and/or Math instruction in the Title I program.

Total school enrollment figures were obtained from the District's October 1 classification report and include the number of kindergarten students.

The percent of students receiving free lunch in each school was taken from Report No. 75-1, Title I School Eligibility Data.

Presentation of Data

Program population characteristics. Table 1 presents the characteristics of the total District population and of students enrolled in Title I

TABLE 1

CHARACTERISTICS OF TITLE I AND DISTRICTWIDE STUDENT POPULATION IN GRADES K-8

	TITLE I	DISTRICTWIDE
SEX		
% Male	56.4	51.3
% Female	43.6	48.7
ETHNIC GROUP		
% White	28.9	70.7
% Black	44.0	17.2
% Other	27.1	12.1
FAMILY PATTERNS		
% Live with both parents	42.6	69.5
% Live with mother	36.5	24.3
% Other	20.9	6.2
GRADE		
% K	8.1	11.6
% 1	10.1	11.4
% 2	12.8	10.8
% 3	13.1	10.6
% 4	13.3	10.4
% 5	12.6	10.7
% 6	12.2	11.2
% 7	9.7	11.5
% 8	8.1	11.8
% OF ATTENDING STUDENTS BELOW OEO POVERTY LEVEL	14.1	9.15
TOTAL NUMBER	5,662	43,038

Source: Geo-coded student master file, Fall, 1975; Title I Class Lists, Fall, 1975

programs in grades Kindergarten through eight, during the 1975-76 school year. Data are presented regarding the sex, ethnic group, and grade distribution of the two populations. The family patterns* and percent of poverty of the attending students are also noted.

The Title I program population characteristics which are listed in Table 2 include the total school enrollment, number of students enrolled in the Title I program, the ethnic distribution of the Title I students, percent of Title I students who are female, the percentage of poverty of the total school enrollment and of the Title I students, the percent of the school enrollment receiving free school lunches, and mobility for the Title I students.

Program characteristics. Title I program characteristics examined in Table 3 include the number of students enrolled in Title I Reading, Math, or both Reading and Math classes, grade levels served by the program, and cost per Title I student in addition to the program's 1975-76 allocation. The last three columns refer to the number of Title I students scoring in the lower three stanines in Reading, Math, or both on the 1975 Fall MAT pre-test. Number of students in the lower three stanines differ from the number being served because the latter number is a duplicated count and the former is not.

Table 4 compares the results of the Fall, 1975, Reading and Math Computation subtests of the Metropolitan Achievement Test (MAT) between the Title I and District student populations in grades two through eight.

MAT baseline scores. Table 5 specifies the mean percentile MAT scores, the number of students enrolled in each Title I program, and the number of Reading and Math students pre-tested. The mean percentile MAT scores are based on the pre-test scores of Title I Reading and/or Math students.

Discussion

The enrollment in fifty-four Title I programs totaled 5,662 students in kindergarten through eighth grade. Reading instruction was received by 2,596 students, 1,606 received Math instruction, and 1,460 received Reading and Math instruction.

In comparison to the Districtwide ethnic distribution, minority groups were over-represented in Title I. Forty-four percent of the students were Black, 29 percent were White, and 27 percent belonged to other ethnic groups.

The majority (56.4%) of Title I students were male.

The largest percentage (13%) of Title I students was enrolled at the fourth grade level; the smallest percentage (8%) was enrolled at the kindergarten and eighth grade levels.

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*Family patterns refers to the relationship of students to the adults with whom they live, e.g., living with both parents, living with mother only, etc.

TABLE 7

TITLE I PROGRAM POPULATION CHARACTERISTICS
FALL, 1975

School	Total School Enrollment	Title I Enrollment	Title I Ethnic Distribution			% Title I Female Students	% Poverty of Total Enrollment	% Poverty of Title I Students	% Free Lunch of Total Enrollment	% Mobility of Title I Students
			% White	% Black	% Other					
Adams	392	60	72	0	28	47	12	12	29	7
Allen	356	68	74	0	26	39	15	15	15	3
Beacon Hill	375	145	12	29	59	34	14	11	42	18
Brighton	345	84	11	67	22	38	10	10	53	21
Colman	324	133	5	74	21	53	17	15	78	15
Columbia	319	110	17	59	24	48	17	15	58	27
Concord	237	104	67	2	31	42	4	4	57	27
Cooper	355	94	66	7	27	46	15	15	42	16
[illegible]	409	120	56	15	29	43	10	10	23	14
Dearborn Park	489	194	17	47	36	46	12	12	38	15
Dunlap	371	117	15	63	22	52	8	9	44	27
Fairmount Park	378	130	59	19	22	41	17	20	21	13
Gatzert	406	160	6	60	34	51	36	36	50	20
Graham Hill	276	46	37	46	17	32	7	6	34	11
Green Lake	236	52	77	8	15	47	11	10	49	13
Hawthorne	265	92	16	66	18	44	15	14	49	8
High Point	243	119	23	35	42	46	46	40	97	22
Hughes	447	104	73	9	18	44	13	14	25	8
Kimball	430	121	14	42	44	43	15	15	33	10
King	359	59	5	76	19	53	16	21	30	14
Leschi	445	286	4	90	6	48	18	18	50	16
Lowell	262	85	41	27	32	40	12	14	48	8
Madrona	825	189	13	79	8	37	12	18	39	7
Maple	412	213	45	21	34	44	15	13	35	14
McGilvra	201	36	19	78	3	37	7	19	34	19
Minor	475	206	4	80	16	50	27	25	46	21
Muir	545	178	9	79	12	40	9	8	31	13
Oak Lake	357	86	67	[illegible]	29	39	13	12	23	28
Roxhill	351	92	62	17	21	52	3	3	37	15
Sanislo	312	66	74	3	23	27	10	9	27	17
Stevens	335	95	20	66	14	49	12	15	36	6
Van Asselt	619	184	13	60	27	43	25	23	37	11
West Woodland	630	155	77	2	21	42	13	12	24	21
Whitworth	564	147	23	61	16	39	11	10	31	24
Wing Luke	331	97	10	45	45	54	13	15	48	19
Boren	645	78	48	19	33	29	16	17	38	29
Hamilton	673	218	41	46	13	47	11	13	38	9
Meany	839	205	18	67	15	38	13	19	30	24
Mercer	1,240	136	[illegible]	38	22	43	14	12	40	10
Monroe	892	135	67	2	31	39	11	10	20	24
Sharples	836	102	16	63	21	42	13	15	41	17
South Shore	1,082	142	27	60	13	56	8	11	34	12
Wilson	690	121	36	53	11	29	12	17	38	21
Blessed Sacrament	*	15	*	*	*	*	*	*	*	*
Mt. Virgin		13								
Guadalupe		14								
St. Alphonsus		32								
St. Benedict		20								
St. Catherine		12								
St. Edward		26								
St. George		22								
St. Joseph		37								
St. Mary		44								
St. Teresa		43								
GRAND TOTAL OR AVERAGE	20,571	5,662	29	44	27	44	9	15	27	16

*This information was not available for the non-public school programs

TABLE 3

TITLE I PROGRAM CHARACTERISTICS

School	Number of Reading Students	Number of Math Students	No. of Reading & Math Students	Grade Level Served	Total 1975-76 Allocation	Cost Per Student	No. of T-I Students in *1.3S - Reading	No. of T-I Students in *1.3S - Math	No. of T-I Students in *1.3S - Reading & Math
Adams	9	29	22	1-6	$27,262	454	12	17	24
Allen	25	25	18	1-5	26,008	382	12	10	27
Beacon Hill	73	13	59	K-6	42,773	295	20	17	45
Brighton	84	N/A	N/A	K-6	37,287	444	9	9	39
Colman	77	56	N/A	K-6	56,090	422	8	10	62
Columbia	110	N/A	N/A	K-6	51,077	464	10	8	50
Concord	104	N/A	N/A	K-6	31,649	304	11	12	41
Cooper	53	41	N/A	K-6	36,036	383	6	7	20
Day	67	39	14	K-5	53,428	445	20	11	29
Dearborn Park	21	48	125	K-6	66,744	344	18	29	81
Dunlap	31	32	54	K-4	41,206	352	17	6	43
Fairmount Park	N/A	130	N/A	K-6	29,769	229	16	16	32
Gatzert	48	112	N/A	K-6	53,897	337	13	27	56
Graham Hill	46	N/A	N/A	1-6	24,285	528	6	11	12
Green Lake	25	27	N/A	2-5	19,271	371	5	6	15
Hawthorne	49	14	29	K-6	27,889	303	12	13	26
High Point	119	N/A	N/A	K-6	56,717	477	8	6	49
Hughes	104	N/A	N/A	K-6	31,805	306	5	21	37
Kimball	41	27	53	1-6	47,003	388	25	16	54
King	14	7	38	K-4	44,183	749	7	8	8
Leschi	23	63	200	K-4	62,357	218	13	46	78
Lowell	85	N/A	N/A	2-4	25,695	302	14	4	17
Madrona	26	93	70	5-6	63,611	337	10	25	127
Maple	48	29	136	K-6	52,643	247	19	35	67
McGilvra	23	3	10	1-4	15,511	431	3	5	11
Minor	61	12	133	K-5	79,905	388	7	6	52
Muir	104	49	25	K-6	77,868	437	21	20	57
Oak Lake	51	35	N/A	K-5	28,829	335	6	20	22
Roxhill	23	32	37	K-6	30,865	335	8	20	28
Sanislo	19	5	42	K-6	35,723	541	7	6	18
Stevens	18	4	73	K-4	40,579	427	6	6	25
Van Asselt	52	87	45	K-6	111,867	608	11	16	62
West Woodland	49	38	68	K-6	66,901	432	22	17	21
Whitworth	46	34	67	K-6	57,344	393	17	22	48
Wing Luke	22	58	17	K-4	43,086	444	7	13	31
Boren	37	24	17	7-8	34,394	405	13	10	38
Hamilton	218	N/A	N/A	6-8	33,739	155	29	36	100
Meany	115	90	N/A	7-8	36,149	176	7	30	90
Mercer	82	41	33	7-8	47,889	303	20	1	63
Monroe	50	55	30	7-8	34,328	202	15	19	47
Sharples	70	26	6	7-8	40,224	317	15	5	72
South Shore	74	59	7	5-8	59,123	416	9	12	43
Wilson	54	60	7	6-8	35,989	295	5	22	70
Blessed Sacrament	2	10	3	2-8	175,000**	629***	1	10	2
Mt. Virgin	13	N/A	N/A	2-4			2	—	8
Guadalupe	6	7	1	2-8			1	5	3
St. Alphonsus	32	N/A	N/A	K-8			3	3	12
St. Benedict	3	10	7	3-8			1	8	9
St. Catherine	N/A	12	N/A	6-8			—	10	2
St. Edward	9	13	4	2-7			3	11	9
St. George	22	N/A	N/A	2-7			3	4	12
St. Joseph	3	33	1	2-8			2	19	8
St. Mary	29	12	3	2-8			7	10	25
St. Teresa	25	12	6	2-8			9	12	21
GRAND TOTAL	2596	1,606	1,460	—	$2,093,998	—	356	748	2,048

* Lower three stanines

** This is the allocation for all the non-public school programs.

*** This is the average cost per non-public school student.

N/A indicates program does not include this subject.

TABLE 4

FALL, 1975, METROPOLITAN ACHIEVEMENT TEST MEAN PERCENTILES
FOR TITLE I AND DISTRICT STUDENT POPULATIONS, BY GRADE

GRADE	READING				MATHEMATICS COMPUTATION			
	Title I		District		Title I		District	
	No. Tested	Mean %-tile	No. Tested	Mean %-tile	No. Tested	Mean %-tile	No. Tested	Mean %-tile
2nd	505	17.4	4450	48.0	293	23.4	4459	46.6
3rd	487	14.8	1992	30.1	319	13.7	1964	36.0
4th	410	16.2	4150	49.1	406	12.0	4168	38.0
5th	343	10.5	1077	24.4	404	10.9	1070	15.6
6th	399	18.1	4470	48.4	338	13.2	4482	38.5
7th	301	14.0	51	15.8	128	9.5	34	12.6
8th	272	14.9	4549	41.6	159	11.0	4612	46.6
TOTAL	2717	15.3	20,739	43.9	2047	13.6	20,789	40.5

TABLE 5

TITLE I BASELINE METROPOLITAN ACHIEVEMENT TEST SCORES

FALL 1975

SCHOOL	Read. Students Pre-tested	Math Students Pre-tested	MEAN PERCENTILE MAT SCORE											
			Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
			R*	M**	R*	M**	R*	M**	R*	M**	R*	M**	R*	M**	R*	M**
Adams	27	47	13	3	13	6	12	10	18	20	16	8				
Allen	36	32	11	16	11	9	15	8	12	10						
Beacon Hill	84	61	10	15	12	14	19	13	8	4	17	18				
Brighton	63	N/A	19	N/A	9	N/A	12	N/A	8	N/A	28	N/A				
Colman	41	45	6	16	12	21	4	30	4	17	17	12				
Columbia	81	N/A	15	N/A	18	N/A	19	N/A	13	N/A	16	N/A				
Concord	68	N/A	16	N/A	10	N/A	14	N/A	10	N/A	17	N/A				
Cooper	22	35	16	22	18	22	7	12	N/A	4						
Day	52	49	22	26	10	15	16	13	13	13						
Dearborn Park	107	137	24	29	11	17	9	11	10	7	15	9				
Dunlap	52	57	8	26	8	14	14	9								
Fairmount Park	N/A	78	N/A	44	N/A	9	N/A	24	N/A	12	N/A	23				
Graham Hill	38	N/A	18	N/A	22	N/A	22	N/A	13	N/A	29	N/A				
Gatzert	19	97	11	N/A	13	12	N/A	26	15	20	N/A	16				
Green Lake	18	25	34	23	11	26	14	18	15	10						
Hawthorne	59	23	28	31	10	16	22	13	10	15	24	N/A				
High Point	66	N/A	19	N/A	8	N/A	10	N/A	6	N/A	12	N/A				
Hughes	80	N/A	16	N/A	22	N/A	24	N/A	18	N/A	23	N/A				
Kimball	82	73	19	34	8	7	12	14	15	13	14	10				
King	35	22	31	30	16	20	46	N/A								
Leschi	97	133	15	17	11	12	13	6								
Lowell	74	N/A	31	N/A	38	N/A	17	N/A								
McGilvra	23	6	34	N/A	13	2	12	N/A								
Madrona	90	149							9	9	8	9				
Maple	108	95	16	13	17	9	14	8	20	8	22	20				
Minor	57	30	10	N/A	10	11	11	5	12	2						
Muir	82	49	14	11	20	17	15	8	6	1	14	18				
Oak Lake	31	32	18	N/A	20	N/A	27	15	2	10						
Roxhill	39	51	12	13	8	6	20	17	9	10	23	12				
Seaisle	38	30	13	42	15	29	39	23	12	15	43	29				
Stevens	38	36	11	29	13	12	14	7								
Van Asselt	30	74	31	32	10	3	10	7	N/A	4	15	18				
West Woodland	69	44	23	31	22	43	14	7	1	1	12	17				
Whitworth	79	71	15	11	14	9	11	10	7	22	16	15				
Wing Luke	29	45	16	20	16	10	10	8								
Blessed Sacrament	4	12	6	N/A	14	46	56	N/A	N/A	N/A	N/A	12	N/A	9	10	21
Guadalupe	7	8	28	N/A	1	3	19	N/A	30	86	N/A	30	N/A	N/A	N/A	32
Mt. Virgin	12	N/A	22	N/A	12	N/A	7	N/A								
St. Alphonsus	22	N/A	8	N/A	1	N/A	10	N/A	7	N/A						
St. Benedict	10	17	N/A	N/A	10	19	N/A	10	N/A	N/A	10	9	N/A	9	27	14
St. Catherine	N/A	12									N/A	9	N/A	13	N/A	7
St. Edward	12	17	20	N/A	18	21	32	2	15	11	1	4	N/A	15	19	N/A
St. George	22	N/A	22	N/A	10	N/A	14	N/A	8	N/A	31	N/A				
St. Joseph	4	27	1	N/A	N/A	N/A	N/A	5	N/A	10	4	9	N/A	N/A	10	5
St. Mary	31	15	16	N/A	9	N/A	14	1	11	N/A	19	7	N/A	10	14	9
St. Teresa	31	18	7	N/A	10	N/A	26	6	13	2	10	8	N/A	N/A	14	N/A
Boren	50	34											16	8	19	15
Hamilton	193	N/A							N/A	N/A	20	N/A	13	N/A	22	N/A
Meany	95	60											23	8	15	6
Mercer	71	27											8	8	10	10
Monroe	66	57											13	11	12	15
Sharples	71	30									4	N/A	11	N/A	5	8
South Shore	47	32							2	2	15	7	N/A	N/A	14	14
Wilson	55	55									20	10	12	12	11	9
TOTAL	2717	2047														
AVERAGE			17	23	15	14	16	12	11	11	18	13	14	10	15	11

*Reading
**Math
Blanks in columns indicate school does not include that grade level.
N/A indicates program did not serve students in that subject at that grade.

Research and Evaluation Question #2: Achievement Test Score Pattern

What is the pattern of achievement test scores of Title I students?

Design

Metropolitan Achievement Test Reading and Math Computation pre- and post-mean percentile scores were computed for each program and grade level. To determine the achievement pattern for each Title I program, Reading and Math gain percentile scores were computed.

Presentation of Data

Table 6 presents the mean percentile pre- and post-test scores for the Reading and Math Computation subtests for Title I students in each program, as well as the mean gains. The Reading scores are reported for those students who were enrolled in Reading programs, and Math scores presented for students enrolled in Math programs. The figures are based on only those students who had both pre- and post-test scores. Data are also summarized by grade level.

Discussion

Of the schools with Reading programs listed in Table 6, the five programs that showed the largest Reading mean percentile gain were Allen (20%*), Green Lake (21%), King (22%), McGilvra (53%), and West Woodland (19%). Programs that experienced losses in the mean Reading score were Graham Hill (-.4%), Sanislo (-.7%), Blessed Sacrament (-.6%), and St. Alphonsus (-.2%). The mean percentile gain for all students in Reading programs was 8.4 points.

Students at the second and third grade level in Reading showed the largest mean percentile gain (13% and 16%, respectively), while students at the sixth grade level showed the least gain (2%).

The five Math programs that experienced large percentile gains were McGilvra (74%), Oak Lake (26%), West Woodland (23%), Blessed Sacrament (22%), and Guadalupe (23%). There were eleven programs that showed very low gains: Cooper (3%), Fairmount Park (4%), Gatzert (4%), Madrona (4%), Muir (2%), Roxhill (3%), Stevens (3%), Wing Luke (4%), Meany (3%), Mercer (3%), and Wilson (3%). Sanislo showed a loss (-11%). The mean gain for all students in Math programs was 8.6 points.

Students at the eighth grade level showed the highest Math gain; however, elementary students at the second, third, and fourth grade levels show gains more consistently than do secondary students.

*The percent sign is used here and throughout this discussion to indicate percentile points.

TABLE 6

PRE- AND POST-TEST READING AND MATH
MEAN PERCENTILE SCORES FOR TITLE I STUDENTS
FALL, 1975

	READING				MATHEMATICS			
Programs	N	Pre-Test Mean %	Post-Test Mean %	Mean %ile Gain	N	Pre-Test Mean %	Post-Test Mean %	Mean %ile Gain
Adams	26	14.00	21.12	7.19	44	13.83	25.11	11.73
Allen	32	11.67	29.63	19.97	29	10.8[illegible]	23.97	11.10
Beacon Hill	76	13.36	22.36	12.05	55	12.[illegible]9	22.03	9.64
Brighton	59	13.94	17.34	2.48	N/A	[illegible]/A	N/A	N/A
Colman	38	9.[illegible]	15.24	7.[illegible]	40	17.20	24.93	8.10
Columbia	70	16.25	21.11	4.57	N/A	N/A	N/A	N/A
Concord	6[illegible]	13.72	23.12	5.23	N/A	N/A	N/A	N/A
Cooper	19	16.32	32.62	15.42	33	14.40	16.41	2.88
Day	48	16.37	29.94	13.31	43	16.76	31.13	13.5[illegible]
Dearborn Park	87	14.22	23.93	10.49	117	14.41	20.46	5.70
Dunlap	45	9.52	23.13	13.53	51	15.35	20.54	5.31
Fairmount Park	N/A	N/A	N/A	N/A	73	22.49	25.74	3.80
Gatzert	17	12.21	22.24	8.77	88	20.[illegible]2	24.53	3.76
Graham Hill	[illegible]6	21.55	22.56	-0.42	N/A	N/A	N/A	N/A
Green Lake	15	14.56	40.09	20.53	20	18.60	25.64	8.55
Hawthorne	56	19.22	32.55	11.86	22	25.00	34.73	9.96
High Point	59	12.03	20.86	10.20	N/A	N/A	N/A	N/A
Hughes	69	20.59	28.09	7.77	N/A	N/A	N/A	N/A
Kimball	81	14.06	26.32	11.78	71	15.15	27.28	12.00
King	33	25.40	44.19	22.03	20	22.09	31.92	12.70
Leschi	91	12.75	46.11	17.92	127	11.40	27.24	14.25
Lowell	69	31.22	37.61	9.74	N/A	N/A	N/A	N/A
Madrona	87	8.62	9.96	1.61	142	9.08	13.08	4.10
Maple	96	17.[illegible]	22.41	4.06	84	11.60	18.33	6.58
McGilvra	22	20.61	70.13	52.59	6	1.67	75.33	73.67
Minor	52	10.04	33.69	9.31	27	7.73	18.41	9.67
Muir	78	14.45	23.10	8.91	48	13.22	15.09	2.15
Oak Lake	25	19.94	28.83	7.20	28	12.50	38.71	26.18
Roxhill	34	14.62	16.06	1.09	47	12.02	14.98	3.32
Sanislo	30	23.24	20.44	-0.73	22	23.30	11.04	-10.55
Stevens	36	12.47	23.[illegible]4	10.00	32	16.81	16.56	3.16
Van Asselt	27	15.60	20.27	6.89	67	12.14	22.40	9.99

TABLE 6, cont.

PRE- AND POST-TEST READING AND MATH
MEAN PERCENTILE SCORES FOR TITLE I STUDENTS
FALL, 1975

	READING				MATHEMATICS			
Programs	N	Pre-Test Mean %	Post-Test Mean %	Mean %ile Gain	N	Pre-Test Mean %	Post-Test Mean %	Mean %ile Gain
West Woodland	57	14.42	34.12	19.26	34	23.07	43.47	22.50
Whitworth	73	12.89	20.55	7.77	67	13.01	18.84	6.02
Wing Lake	27	15.10	19.72	6.67	44	10.98	14.94	4.00
Boren	37	17.24	19.24	1.11	23	9.77	26.80	16.74
Hamilton	180	18.42	25.96	7.69	N/A	N/A	N/A	N/A
Meany	77	19.53	20.96	3.10	42	7.10	10.23	3.02
Mercer	62	8.86	15.40	5.41	8	8.67	10.09	3.13
Monroe	57	12.17	16.25	3.04	48	13.65	24.64	10.54
Sharples	57	8.60	13.37	4.82	25	8.43	25.43	17.80
South Shore	43	13.47	17.96	5.72	29	9.34	21.40	13.07
Wilson	48	15.06	16.94	2.63	49	10.27	14.29	3.35
Blessed Sacrament	3	21.50	22.50	-6.00	12	17.33	43.39	22.17
Guadalupe	7	20.57	21.29	0.71	7	30.63	46.00	23.29
Mt. Virgin	12	13.58	18.00	4.25	N/A	N/A	N/A	N/A
St. Alphonsus	21	13.91	14.27	-2.05	N/A	N/A	N/A	N/A
St. Benedict	10	14.60	27.20	12.60	16	12.65	31.38	18.94
St. Catherine	N/A	N/A	N/A	N/A	12	9.50	17.08	7.58
St. Edwards	9	19.75	36.50	18.44	11	11.71	25.36	17.36
St. George	20	17.68	20.65	2.35	N/A	N/A	N/A	N/A
St. Joseph	4	4.75	16.00	11.25	24	7.82	20.50	12.88
St. Mary	30	13.10	17.84	4.47	9	8.13	17.33	9.22
St. Teresa	30	14.03	28.30	13.87	18	5.28	20.56	15.28
TOTAL	2438	15.09	24.55	8.35	1814	13.67	22.24	8.58
Grade								
2nd	456	17.40	30.34	13.28	256	23.37	31.39	8.09
3rd	444	14.76	29.72	15.81	282	13.67	23.34	9.29
4th	377	16.13	22.19	6.72	384	12.05	21.19	9.89
5th	306	10.46	14.71	4.24	364	10.87	18.35	7.59
6th	373	18.09	19.78	2.16	319	13.18	19.99	6.70
7th	247	14.05	20.12	6.81	80	9.49	17.82	6.84
8th	235	14.86	19.92	4.86	129	10.98	23.03	12.66

N/A indicates program did not include this subject

Research and Evaluation Question #3: Part A*
Reading and Math Achievement by Program

Which Title I public school programs produce the highest adjusted mean percentile in Reading and Math achievement?

Design

Metropolitan Achievement Test Reading and Math Computation subtest scores were converted to average mean percentiles for each program. Covariance adjustments were used in order to eliminate the influence of external factors such as grade, ethnic group and pretest scores. Sex, poverty level and family patterns did not influence the test score. Adjusted mean percentiles were compared for all programs.

Presentation of Data

The data are arranged in Tables 7 and 8, in three groups of programs producing the highest to the lowest mean percentiles in Reading and Math.

Discussion

Forty-two Reading programs are grouped in Table 7 according to their ability to produce high MAT Reading mean percentiles. The most successful programs were King and McGilvra. The least successful were Brighton and Sanislo.

Thirty-five programs were grouped in Table 8 according to their ability to produce high Math scores. King and West Woodland had the most successful Math programs; Green Lake and Sanislo had the least successful programs.

Both the Reading and Math programs in seven schools ranked in the upper 25%; Allen, Kimball, King, Leschi, West Woodland, and McGilvra (although only six students were pre- and post-tested in Math at McGilvra).

Research and Evaluation Question #3: Part B
Reading and Math Achievement by Program

Which Title I non-public school programs produce the most gains in Reading and Math achievement?

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*Part A of this question deals exclusively with Title I public school programs. Because Title I non-public school student data on external factors (ethnic group, poverty level and living status) were not available, analysis for these programs has been done separately (refer to Part B of this question), based on unadjusted mean percentile gain scores.

TABLE 7

TITLE I READING PROGRAMS GROUPED* BY ADJUSTED MEAN READING PERCENTILES

FALL, 1975

UPPER 25 PERCENT		
Allen	King	Mercer
Dearborn Park	Leschi	West Woodland
Hamilton	Lowell	Wing Luke
Kimball	McGilvra	
MIDDLE 50 PERCENT		
Adams	Dunlap	Monroe
Beacon Hill	Green Lake**	Muir
Boren	Hawthorne	Sharples
Colman	High Point	South Shore
Columbia	Hughes	Van Asselt
Cooper **	Meany	Whitworth
Day		Wilson
LOWER 25 PERCENT		
Brighton	Madrona	Roxhill
Concord	Maple	Sanislo
Carzert**	Minor	Stevens
Graham Hill	Oak Lake	

* Note: Programs are listed alphabetically within group.

** Programs with less than 20 students pre and post tested.

TABLE 8

TITLE I MATH PROGRAMS GROUPED* BY ADJUSTED MEAN MATH PERCENTILES

FALL, 1975

UPPER 25 PERCENT		
Allen	Leschi	South Shore
Kimball	McGilvra**	West Woodland
King	Mercer**	
MIDDLE 50 PERCENT		
Adams	Gatzert	Monroe
Beacon Hill	Hawthorne	Oak Lake
Boren	Madrona	Roxhill
B. F. Day	Maple	Sharples
Colman	Meany	Van Asselt
Dearborn Park	Minor	Whitworth
Dunlap		
LOWER 25 PERCENT		
Cooper	Muir	Wilson
Fairmount Park	Sanislo	Wing Luke
Green Lake	Stevens	

* Note: Programs are listed alphabetically within group.

** Programs with less than 20 students pre and post tested.

Design

Metropolitan Achievement Test Reading and Math Computation subtest scores were converted to pre- and post-test mean percentiles for each program. Then a mean percentile gain score was computed from these for each program in Reading and Math.

Presentation of Data

Table 9 presents the non-public school programs according to their effectiveness in producing the greatest to the least gains in Reading and Math. The mean percentile gain score for each program and the average for all Title I programs are also presented.

Discussion

Ten non-public Reading programs and eight non-public Math programs are grouped in Table 9 according to their ability to raise the students' MAT scores. Of the Reading programs, St. Edward was the most successful; Blessed Sacrament, the least. Blessed Sacrament and Guadalupe were the most successful Math programs; St. Catherine and St. Mary were the least successful Math programs. It should be noted that most of the non-public school programs had less than 20 students pre- and post-tested.

Compared to the other District Title I programs, 40% of the non-public Reading programs and 88% of the Math programs were above average.

TABLE 9

TITLE I NON-PUBLIC READING AND MATH PROGRAMS
GROUPED* BY UNADJUSTED MEAN PERCENTILE GAIN SCORES
FALL, 1975

READING	MATH
UPPER 25 PERCENT	
St. Benedict**	Blessed Sacrament**
St. Edward**	Guadalupe**
St. Teresa	
MIDDLE 50 PERCENT	
Mt. Virgin**	St. Benedict**
St. George	St. Edward**
St. Joseph**	St. Joseph
St. Mary	St. Teresa**
LOWER 25 PERCENT	
Blessed Sacrament**	St. Catherine**
Guadalupe	St. Mary
St. Aphonsus	

*Note: Programs are listed alphabetically within group.
**Programs with less than 20 students pre and post tested.

Research and Evaluation Question #4: Transfer of Learning

Is there a transfer of learning from compensatory programs to regular classroom programs?

Design

Grades on student progress report cards for the first and last marking periods of the 1975-76 school year were used as a measure of student progress in the regular classroom. Areas of emphasis in the categories of Reading, Mathematics, conduct and attitudes, and work and study habits, were selected. A three-point scale compatible with standard grading procedure, ranging from 1 = "Needs Improvement" to 3 = "Outstanding", was used.

Samples of approximately 300 students were selected in each of two groups for purposes of comparison. Group I was a random sample of Title I participating students in grades 2, 4, and 6. Group II was a sample of students in grades 2, 4, and 6 in non-Title I schools selected on the basis of low academic achievement, and similar distributions of ethnic group, sex, and family patterns.

A Student Progress Report Card Grades Survey* for each student in the sample was sent to the schools at the time when final report cards were being graded, for completion by the classroom teachers. Five hundred sixty-four surveys were returned, 335 for Group I and 229 for Group II.

Presentation of Data

An analysis of variance between the groups using report card gains as the dependent variable was performed. Figure 1 shows the results of the Report Card Grades Survey. Mean grades for the first and last marking periods on the eight items are shown for each group. The difference between the first marking period and last marking period grades is the mean gain score for the group.

Pearson correlations were calculated between report card grade gains and MAT Math and Reading score gains. Correlations of the MAT score gains and report card grade gains indicated that there was little relation between MAT gains and report card gains (r ranged from .12 to -.05).

Discussion

Title I program staff have frequently stated that Metropolitan Achievement Tests alone were inadequate to document all of the improvement made by

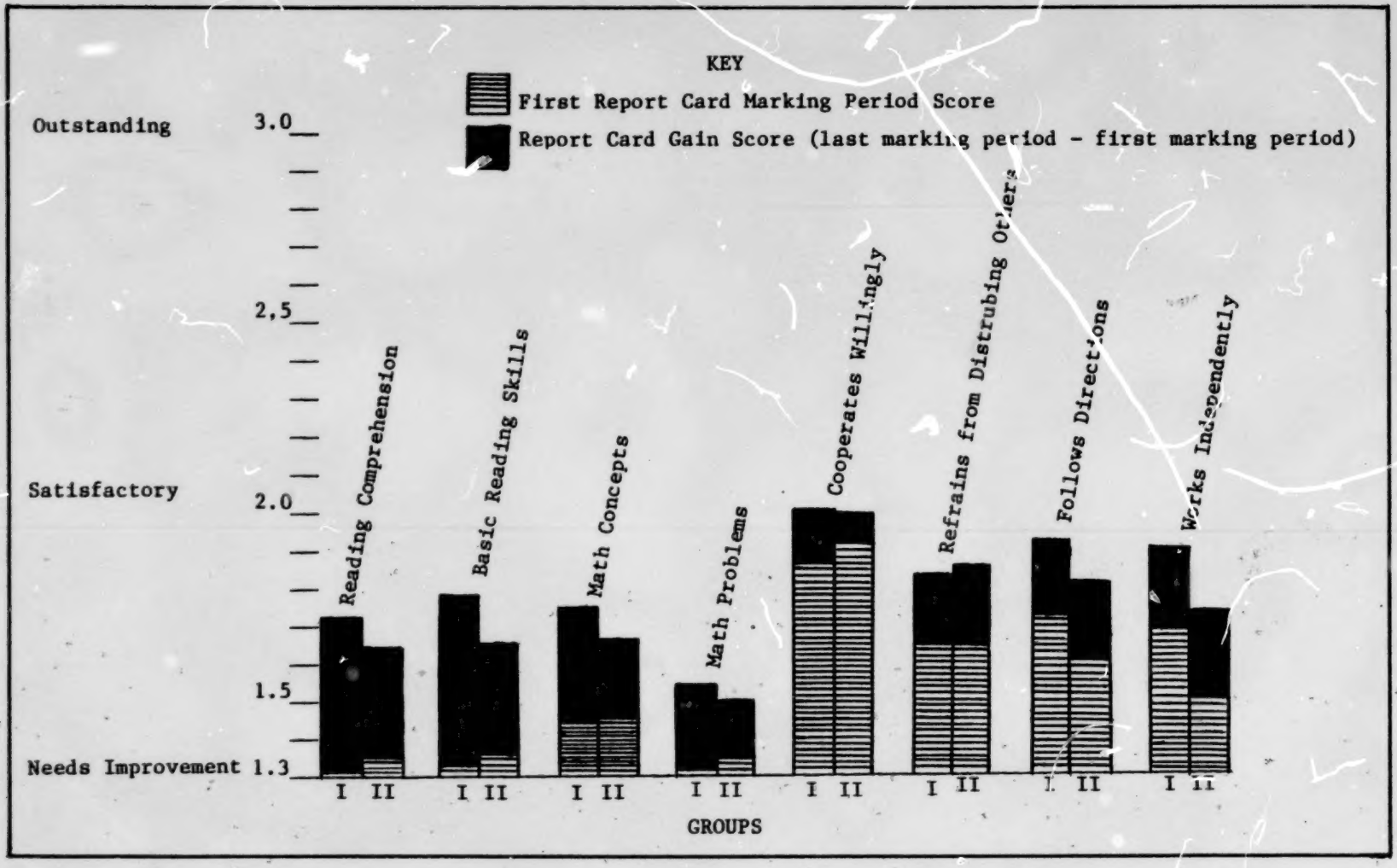
*A copy of this survey is included in Appendix B.

FIGURE 1

COMPARISON OF REPORT CARD GAINS

(GROUP I, TITLE I VS. GROUP II, NON-TITLE I)

FALL, 1975



participating students. This report used report card grades as measures of changing student performance that were independent of MAT scores. While it is to some degree a subjective measure, it is one that is widely accepted as a good indication of the students' overall adjustment to, and progress in school.

The data indicate that the Title I students (Group I) had somewhat higher report card grades than the comparison (Group II) students for the first marking period. Both groups showed gains; however, Title I students made substantially greater gains in academic areas and had grades above those of non-Title I students for the last marking period. Title I students made more gains in basic Reading skills and Reading comprehension than they made solving Math problems, as indicated by report cards. The groups did not make significantly different gains in non-academic areas.

A comparison of the Title I and Control groups from the 74-75 and 75-76 school years indicates that overall, the Title I group has consistently made greater report card gains in the academic areas. The performance of the Title I students was identical for the two years, while the control group's scores seem to be systematically depressed for the 1975-76 school year.

Report card grade gains remain uncorrelated with MAT gains. However, as a separate measure of achievement, they demonstrate that students are improving academically due to Title I instruction.

Research and Evaluation Question #5: Socio-Economic and Population Characteristics

How much do socio-economic and population characteristics affect academic achievement?

Design

Metropolitan Achievement post-test scores (one Reading and one Math respectively) were recorded for each Title I Reading and Math student.

Multiple regression was used to determine the effects of four population characteristics, as well as the pre-test. Ethnic group, grade, family patterns, and sex were the four population characteristics that were extracted.

Presentation of Data

Table 10 is a summary of the results of the first part of the stepwise multiple regression. This table indicates the order of importance and the amount of test score variation associated with each of the four population characteristics, as well as the pretest score.

Discussion

Historically, socio-economic and population characteristics have been known to have a strong effect on academic achievement.

Table 10 indicates that, of the socio-economic and population characteristics, pre-test score accounts for the most variation in the post-test score. Variation shared between the pre-test score and the socio-economic variables is included in the pre-test score variation. Socio-economic variation that is not shared with pre-test score is negligible as shown in Table 10.

NOTE: Pre-test score is considered a population characteristic in that it is a measure of what a student brings into the Title I class prior to any program impact on that student.

TABLE 10

MAT POST-TEST SCORE VARIATION ASSOCIATED WITH
STUDENT POPULATION CHARACTERISTICS
FALL, 1975

Population Characteristics	% Reading Post-Test Score Variation Accounted For*	% Math Post-Test Score Variation Accounted For*
Pre-test Score	30.5	35.5
Grade	3.3	.0
Ethnic Group	.1	2.0
Family Patterns	.1	.0
Sex	.0	.0
Total	34.0	37.5

*It should be noted that variation shared between variables is associated with the first variable to be extracted in the regression process.

Research and Evaluation Question #6: Instructional Variables

Which instructional variables are related to success with Title I students?

Design

Average Metropolitan Achievement post-test scores (one Reading and one Math respectively) were recorded for each Title I teacher. These scores were determined by averaging each teacher's students' post-test scores.

To determine the most significant instructional variables, stepwise multiple regressions were performed, using the unadjusted post-test scores as the dependent variable and fifty-three instructional variables as independent variables. The instructional variables were extracted based on their contribution to explaining post-test score variation.

Presentation of Data

Following are definitions of the most important Reading and Math instructional variables.

Class Setting - indicates where the class took place, in a self-contained room, a lab or resource center, or in the regular classroom.

District Individualized Instruction Courses - teacher's completion of District in-service courses in individualized instruction.

District Math Courses - teacher's completion of District in-service Math courses.

District Precision Measurement - teacher's completion of District in-service courses in precision measurement.

District Special Education Courses - teacher's completion of District in-service Special Education courses.

Graduate Reading Courses - teacher's completion of graduate courses in Reading.

Graduate Psychology and Child Development Courses - teacher's completion of graduate courses in psychology and child development.

Number of Office of Compensatory Programs Monthly Workshops Attended By the Teacher - this is self-explanatory.

One Student Working Alone - time spent working alone, regardless of the activity.

Percent Audio Tapes/Records - Amount of time spent working with tapes or records.

Percent Discussion - time student spends talking with the teacher about Reading or Math -- an opinion oriented discussion, not factual.

Percent Flashcards - time spent in flashcard activities.

Percent Individualized Instruction - time student spends receiving individualized (one-on-one setting) instruction from the teacher.

Percent Learning Games - amount of time spent with games that have a set of rules or procedures.

Percent Library Book Time - time spent reading library books or magazines or anything that is not a text.

Percent Small Group with Direct Instruction - time spent in a small group (2-6) setting under direct instruction from the teacher.

Percent Silent Reading - time spent reading silently.

Percent Structured Oral Drill - time spent in exercises requiring students to practice material aloud such as word lists, paragraphs or flashcards set up by the teacher.

Percent Time Spent with Visual Aids - amount of time spent using visual aids such as slides, filmstrips, movies, etc.

Percent Workbook Supplementary to Text - amount of time spent using the workbook for the class.

Percent Worksheet - time spent using worksheets for the class.

Tables 11 and 12 present summaries of the Reading and Math regressions of the instructional variables. These tables indicate the order of importance and percent of variation associated with each instructional variable. Definitions for all instructional variables may be found in Appendix C, p. 47.

Discussion

Reading

Table 11 indicates, of the instructional variables surveyed, Graduate Reading Courses accounted for most of the Reading achievement variation. District Math Courses was the second highest contributing variable and was negatively correlated with Reading achievement. These variables were followed by District Individualized Instruction Courses, Class Setting, and Graduate Psychology and Child Development Courses. These variables

TABLE 11

MAT READING POST-TEST SCORE VARIATION
ASSOCIATED WITH INSTRUCTIONAL VARIABLES
FALL, 1975

VARIABLE	% READING POST-TEST SCORE VARIATION	CORRELATION WITH READING POST-TEST SCORE
District Math Courses	15.15	-.39
Graduate Reading Courses	18.58	.38
District Individualized Instruction Courses	5.80	.08
Class Setting	5.58	-.11
Percent Small Group Working Independently	3.57	.23
Percent Problem Solving Activities	2.66	-.19
Percent Library Book Time	3.57	-.11
Graduate Psychology & Child Development Courses	4.53	-.02
Percent Structured Oral Drill	3.39	.16
Percent Silent Reading	3.17	-.07
Days Per Week This Class Meets	3.51	.20
District Remedial Education Courses	3.14	.06
Percent Basal Text	2.10	.03
Percent Learning Games	2.59	.09
Percent Timed Drill	2.61	-.17
Percent Worksheets	1.91	-.18
Percent Organizational Time	2.51	.11
Percent Flashcards	1.66	.14
Percent Workbook Supplementary to Text	1.56	-.13
Instructional Assistant Attending Two-Week Workshop	1.67	.26
Percent Motivational Activities	1.18	.13
Percent Small Group with Direct Instruction	1.37	.03
One Student Working Alone	1.11	-.12
Percent Audio Tapes/Records	1.64	.20
District Special Education Courses	1.12	-.08
Percent Individualized Instruction	1.17	-.14

TABLE 12

MAT MATH POST-TEST SCORE VARIATION
ASSOCIATED WITH INSTRUCTIONAL VARIABLES
FALL, 1975

VARIABLE	% MATH POST-TEST SCORE VARIATION	CORRELATION WITH MATH POST-TEST SCORE
Percent Time Spent With Visual Aids	22.56	.47
Percent Individualized Instruction	9.71	.25
District Special Education Courses	9.90	-.22
District Precision Measurement Courses	16.05	.31
Graduate Reading Courses	7.79	.08
Percent Worksheets	5.43	.12
Number of Office of Compensatory Program Monthly Workshops Attended by Teacher	3.97	.13
Percent Oral Question/Answer	2.82	-.18
Percent Small Group With Direct Instruction	3.21	.28
Graduate Individualized Instruction Courses	4.59	-.20
Percent Discussion	2.70	.04
Number of Students Observed	1.57	-.02
Class Setting	2.34	-.09
Minutes Per Day the Class Meets	2.01	-.11
Percent Timed Oral Drill	1.72	-.16

are directly related to continued training of the teacher. This suggests that about half of the Reading achievement variation of Seattle's Title I students can be attributed to teacher related variables.

Looking at other variables, instructional activities involving teacher/student interactions, such as Percent Structured Oral Drill, Percent Learning Games, Percent Flashcards, Percent Small Group with District Instruction, and Percent Audio Tapes/Records, appeared to produce higher Reading achievement than variables associated with independent student activities such as Percent Library Books, Percent Silent Reading, Percent Worksheets, Percent Workbook Supplementary to Text, and One Student Working Alone. Activities involving more participation by the teacher were related to higher Reading scores.

Math

Table 12 shows that Percent of Time Spent with Visual Aids accounted for most Math achievement variation. This variable was followed by District Precision Measurement Courses, District Special Education Courses, and Percent Individualized Instruction. The correlations indicate that all of these are positively related to Math achievement, except District Special Education Courses, which has a negative relationship.

Other variables in Table 12 that contribute positively toward Math achievement are associated with the teacher. These variables include: District Precision Measurement Courses, Percent Individualized Instruction, Graduate Reading Courses, Number of Office of Compensatory Programs (OCP) Monthly Workshops Attended by the Teacher, Percent Small Group with Direct Instruction and Percent Discussion. These variables represent further training of the teacher or direct interaction between the teacher and the students. This analysis indicates that a strong emphasis on teacher related variables in the classroom will result in higher Math scores.

General

It should be noted that one of the significant characteristics of the multiple regression technique is the removal of variation of all correlated variables when any one variable is removed. For example, Percent Time Spent with Visual Aids, which accounted for 22.56% of the Math post-test score variation, is highly correlated with Percent Motivational Activities, Small Group Working Independently, and Instructional Assistant Attending Workshop. The post-test score variation associated with these variables is removed from the analysis with Percent Time Spent with Visual Aids. Therefore, the reader should think of Percent Time Spent with Visual Aids as the representative of this group of variables.

It is apparent that of all the single instructional variables, teacher related variables make the most significant difference in both Reading and Math achievement. A discussion of how the instructional variables group together to form teaching strategies is contained in the next section of this report.

Research and Evaluation Question #7: Instructional Strategies

Which specific instructional strategies are associated with the most successful classrooms?

Design

The mean gain score on the MAT was calculated for each classroom in the study and adjusted to eliminate the effects of grade, sex, ethnic group, family patterns, and poverty. The classrooms were then grouped, with the 20 percent having the highest mean gain scores in Group 1, the intermediate 60 percent in Group 2, and the 20 percent with the lowest mean gain scores in Group 3. Instructional strategy concentration ratings were computed by combining the values of each variable that made up a given strategy. These ratings represent the degree to which each strategy was concentrated in each classroom. Finally, a mean rating was determined for each group (as shown in Tables 13 and 14) by averaging the scores for all classrooms within each group. For example, the mean instructional strategy concentration rating for the integration strategy is a score representing the average concentration Groups 1, 2 and 3 had on integrating Title I students with regular students. It is made up of the combination of numbers representing whether the Title I class took place in a lab or resource room, within the regular classroom, or in its own self-contained room, plus what percent of the class was made up of non-Title I students, plus how many minutes per week peer tutors are working with Title I students in the Title I class, plus whether or not the Title I class is using the same text as the regular class. Strategies were then compared by group to determine which were associated with various levels of achievement gain.

Presentation of Data

Following are definitions essential to the discussion of the most important Reading and Math instructional strategies:

Audio/Visual Time and Audio/Visual Material - Instruction centers on the student using materials and spending time in activities that are sight and sound sensory oriented.

Non-Instructional Time - Time spent on any activity, other than teaching, such as passing out papers, changing stations, etc.

Precision Measurement - An instructional method including timed oral and written drill, record keeping of daily progress, etc.

Self-Practice - Students working on their own, either reading silently or involved in independent writing.

Structured Drill or Presentation - Oral or written repetition of matter by the student, such as flashcard exercises, reading aloud word lists, writing or saying math facts, etc. This strategy also includes time spent on a planned presentation of material by the teacher to the students in a large group.

Tables 13 and 14 present the mean ratings of instructional strategies for Reading and Math classrooms, respectively. After eliminating some classrooms due to incomplete data, there were forty-two Reading classrooms and twenty-nine Math classrooms; however, these figures show double counts for a classroom where both Reading and Math were taught.

Discussion

Reading

Grouping the instructional strategies under two categories, teacher involved instruction and independent instruction, interesting observations can be made. The high achieving Reading classrooms concentrated on instructional strategies that actively involved the teacher, such as Structured Drill or Presentation. Table 13 also indicates that high achieving classrooms spent less time on instructional strategies requiring the students to work on their own, such as Audio/Visual Time and Materials, and Self-Practice. Conversely, the low achieving Reading classroom spent less time in instruction actively involving the teacher and more time in instruction requiring independent student work.

Math

Instructional Math strategies that discriminated between high, middle and low achieving Math classrooms can be viewed in the same two categories as Reading strategies. High achieving Math classrooms emphasized instructional strategies such as Precision Measurement and Structured Drill or Presentation. The teacher is actively involved in both of these strategies. The high achieving Math classrooms spent very little time with strategies involving independent student work, like Self-Practice or Non-Instructional Time. Table 14 indicates the reverse also holds true. Low achieving Math classrooms spent lots of time in student independent work and put less emphasis on instructional strategies actively involving the teacher.

Based on the evidence presented in question #6 relating to instructional variables and the evidence in this question relating to instructional strategies, it can be concluded that both Reading and Math Title I students achieve higher scores when the teacher is actively involved with them, rather than when students are working independently.

TABLE 13

MEAN INSTRUCTIONAL STRATEGY CONCENTRATION RATINGS
BY READING CLASSROOM GROUPS
FALL, 1975

STRATEGY*	GROUP 1** 10 CASES	GROUP 2** 22 CASES	GROUP 3** 10 CASES	TOTAL 42 CASES
Audio/Visual Materials	10.7	16.1	25.2	17.0
Audio/Visual Time	5.5	11.2	11.2	9.9
Contract	1.9	1.9	1.7	1.9
Diagnostic/Prescriptive	3.3	3.8	3.4	3.6
Individualization	33.1	30.3	39.4	33.1
Integration	116.0	512.0	136.0	328.2
Non-instructional Time	16.7	20.9	19.9	19.7
Non-material Time	16.5	36.9	23.7	28.9
On-going Assessment	5.7	5.3	5.2	5.4
Parent Involvement	10.4	9.0	10.0	9.6
Precision Measurement	1189.5	860.7	1837.9	1171.7
Printed Material	172.4	146.1	152.8	154.0
Self-Practice	70.0	129.7	106.6	110.0
Structured Drill or Presentation	112.8	77.1	69.2	83.7

*Strategy definitions may be found in Appendix D

**Group 1 = High Achievement Gain
Group 2 = Intermediate Achievement Gain
Group 3 = Low Achievement Gain

TABLE 14

MEAN INSTRUCTIONAL STRATEGY CONCENTRATION RATINGS
BY MATH CLASSROOM GROUPS
FALL, 1975

STRATEGY*	GROUP 1** 10 CASES	GROUP 2** 14 CASES	GROUP 3** 5 CASES	TOTAL 29 CASES
Audio/Visual Materials	16.3	10.9	19.9	14.3
Audio/Visual Time	4.6	5.4	10.9	6.0
Contract	1.8	1.9	1.8	1.9
Diagnostic/Prescriptive	3.2	3.4	3.2	3.3
Individualization	37.4	35.1	45.7	37.7
Integration	626.5	75.7	539.0	345.5
Non-instructional Time	19.0	23.8	32.2	23.6
Non-material Time	15.4	28.1	14.4	21.3
On-going Assessment	4.7	4.8	5.0	4.8
Parent Involvement	9.9	9.2	9.8	9.6
Precision Measurement	3103.0	1467.5	1881.0	2104.5
Printed Material	167.3	161.1	165.7	164.0
Self-Practice	105.7	138.7	134.9	126.6
Structured Drill or Presentation	56.6	47.2	50.2	50.9

*Definitions of strategies may be found in Appendix D

**Group 1 = Highest Achievement Gain
Group 2 = Intermediate Achievement Gain
Group 3 = Low Achievement Gain

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

1975-76 Title I Programs

Following is a summary of major findings, conclusions and recommendations drawn from the data presented in this report. The conclusions are considered in three parts, the first relating to General Findings, the second to Reading, and the third to Math.

Findings and Conclusions

General

1. The Title I student population totaled 5,662, with 2,596 students receiving Reading instruction, 1,606 receiving Math, and 1,460 receiving Reading and Math instruction. Compared to the Districtwide ethnic distribution, minority groups were over-represented.

2. Using report card grades as a measure, Title I students had somewhat higher academic grades than did a comparable non-Title I group of students.

3. Again, as indicated on the report cards, Title I students made significant gains in Reading skills and Reading comprehension.

4. Of the external factors analyzed in this study, pre-test score accounts for the most academic achievement variation--30.5% of the Reading and 35.5% of the Math. Other external factors, such as sex, poverty level, and family patterns, are included in the variation explained by the pre-test score.

5. Reading and Math Title I students achieve higher scores when the teacher is actively involved with them, rather than when students are working independently.

Reading

1. There are approximately 1,000 more students involved in the District's Title I Reading programs than in the Math programs.

2. The Reading programs showing the largest mean percentile gains were: Allen (20%*), Green Lake (21%), King (22%), McGilvra (53%), and West Woodland (19%).

*The percent sign is used here and in the next conclusion to indicate percentile points.

3. Reading programs that showed losses in the mean percentile scores were: Graham Hill (-.4%), Sanislo (-.7%), Blessed Sacrament (-. %), and St. Alphonsus (-.2%).

4. The overall mean percentile gain for Reading was 8.4 points, with a wide range of -.7 to +53 points.

5. Greatest mean percentile gains were made by Reading students in the early grades, specifically, second and third grade.

6. The most successful public school Title I Reading program, after eliminating the effects of grade, ethnic group, and pre-test, were King and McGilvra; the least successful were Brighton and Sanislo.

7. Based on unadjusted mean percentile gain scores, the most successful non-public school Title I Reading program was St. Edward; the least successful was Blessed Sacrament.

8. Completion of Graduate Reading Courses by a given teacher was the single instructional variable that contributed the most toward reading post-test score variation.

9. Variables that deal with teacher involvement, such as Percent Structured Oral Drill, Percent Learning Games, Percent Flashcards, Percent Small Group with Direct Instruction, and Percent Audio Tapes/ Records, had a positive effect in producing higher Reading post-test scores.

10. Instructional strategies that contributed the most toward high Reading achievement were those emphasizing teacher involvement, such as Structured Drill or Presentation.

11. Instructional strategies that affected Reading achievement negatively were those when students work independently, like Self-Practice and Audio/Visual Time and Materials.

Math

1. Math programs that showed the largest mean percentile gains included: McGilvra (74%*), Oak Lake (26%), West Woodland (23%), Blessed Sacrament (22%), and Guadalupe (23%).

2. The Math programs showing the lowest mean percentile scores were: Cooper (3%), Fairmount Park (4%), Gatzert (4%), Madrona (4%), Muir (2%), Roxhill (3%), Stevens (3%), Wing Luke (4%), Meany (3%), Mercer (3%), and Wilson (3%).

3. Sanislo was the only Math program that showed a mean percentile loss (-11%).

*The percent sign is used here and in the next conclusion to indicate percentile points.

4. The Math overall mean percentile gain was 8.6 points, with a range of -11 to +74 points.

5. Eighth grade students showed slightly higher Math mean percentile gains than students in other grades; however, elementary students at the second, third, and fourth grade levels show higher gains more consistently than do secondary students.

6. After eliminating the effects of grade, ethnic groups and pre-test, the most successful public school Title I Math programs were King and West Woodland; the least successful were Green Lake and Sanislo.

7. Based on unadjusted mean percentile gain scores, the most successful non-public school Title I Math programs were Blessed Sacrament and Guadalupe; the least successful were St. Catherine and St. Mary.

8. Percent of Time Spent with Visual Aids was the single instructional variable accounting for the most Math post-test score variation.

9. Other variables associated with the teacher, such as District Precision Measurement Courses, Percent Individualized Instruction, Graduate Reading Courses, Number of OCP Monthly Workshops Attended by Teacher, Percent Small Group with Direct Instruction and Percent Discussion, had a positive affect on high Math achievement.

10. Instructional strategies that contributed the most toward high Math achievement were Precision Measurement and Structured Drill or Presentation, both emphasizing teacher involvement.

11. Instructional strategies affecting Math achievement negatively were those where students work independently, like Self-Practice and Non-Instructional Time.

Recommendations

Based on the data presented in this report, the following recommendations are made:

1. That the District should continue and expand in-service teacher training activities for Title I program staff.

2. That the Title I staff should be encouraged to continue further training outside the District. Perhaps a better incentive system could be implemented.

3. That Title I Reading and Math classroom staff should strongly consider increasing instructional activities that involve a lot of teacher/student interaction. Reading activities to increase might include: oral drill, working with learning games, exercises using flashcards, etc. Math activities to increase could include: precision measurement,

discussion, structured drill exercises, lecture or small groups working together under direct teacher instruction, etc.

4. That activities in which students work independently should be decreased for Title I students. Such activities fo Reading could include: reading silently alone, students working alone on practice activities like worksheets or workbooks, or audio/visual activities. Likely activities to decrease for Math might include: students practicing independently, or concept rather than practice exercise.

APPENDIX A

PROCEDURE

Description of Program and School Variables, Curricula and Treatments, Student Information, and Tests

ESEA Title I funding was the criterion for including instructional programs in this study. While programs are similar in the goal of correcting basic skills deficiencies of disadvantaged students, there is a wide range of treatments provided in the individual schools and classrooms. Because this study does not deal with the effects of a single, distinct treatment, one of the initial tasks was to identify the various methods used in order to determine which aspects of treatment are associated with differences in student achievement gains.

Program and School Variables

The items below describe sets of program variables collected on each Title I program:

- Poverty level of attending students and school neighborhoods (based on 1970 Census data);
- Number of students participating in free and reduced price lunch programs;
- Percentages of students scoring in the lower three stanines on the Fall 1975, Metropolitan Achievement Test in Reading, Math, and Reading and/or Math; and
- Number of regular students enrolled.

Curricula and Treatments. More specific instructional information, particularly on curricula and treatments was collected by evaluators for each Title I classroom during fall program visits. The purpose of this information was to measure variables affecting students' academic performance. The form was completed by observing classroom operation and interviewing teachers and staff. (Definitions and the Instructional Information Form are attached, see Appendix C, p. 43.) Variables included in this aspect of the study were as follows:

- Subject taught;
- Whether instruction was given in a laboratory, a Title I self-contained classroom, or within the students' regular classroom setting;

- Whether a tutorial, remedial, or basic instructional approach was used;
- Whether the head Title I classroom person was partially or totally Title I funded;
- Proportion of Title I and non-Title I students in the Title I class;
- Numbers of paraprofessionals and various types of volunteers in each classroom and the amount of time they spent working with the students;
- Average percent of time the student spent learning in the following instructional settings:

  large group (7 or more), small group (2-6), individualized (1 on 1), independent work (1 student working alone), and small group working independently;

- Amount of time each class met;
- Evaluator's observed and teacher's estimated frequency of use of various instructional methods including oral teacher presentations, structured oral drill, oral question/answer, timed oral drill, written practice, timed written drill, problem solving, audio-visual exercises, silent reading, discussion, non-instructional time and motivational activities;
- Evaluator's observed and teacher's estimated frequency of use of each of the following kinds of materials: basal text, learning games, workbook supplementary to text, multi-media kits, library books, audio tapes/records, visual aids, manipulative/lab materials, worksheets, flashcards and non-material time (no material being used);
- Whether the Title I text was the same as that used in the student's regular class;
- Rating of the adequacy of materials and facilities;
- The extent of Systematic Behavior Modification and teacher-made materials used;
- The frequency of classroom interactions:
- Proportion of student activities selected by the staff and proportion selected by the student;
- Types of record keeping that are a regular part of the classroom;
- Teacher's estimated frequency of contact with various people concerning their Title I class; and,

- Background information on the teacher, including total years' teaching experience (both Title I and non-Title I), highest degree earned, completion of various educational courses, and attendance at District workshops.

Student Information. By early November, Title I programs were asked to submit to the Evaluation Office a class list of students enrolled in Title I classes, including the student's identification number and name, subject area, entry date, and teacher. (For copy of the class list form, refer to Appendix E.) The list was then computerized and returned to the teacher for corrections and additions of exit dates and reasons for leaving the program (e.g., graduation from program, end of year, moved to other school in Seattle School District, prepared for job opportunities, and other or unknown). After this first update, the teacher returned the list for editing. This list was then sent out again for final revisions and it was due back into the Evaluation Office during the last week of school. From this list the following information was obtained:

- Total number and identity of all Title I students..
- Total number of reading students.
- Total number of math students.
- Mobility data including length of time in the program and reason for leaving the program.

Further information on students' sex, grade, race, and family patterns was extracted from the student master file dated May, 1976. Nineteen-seventy Census information was the source of census tract poverty percentage.

Tests. Achievement test data were collected for students enrolled in Reading or Math programs in their respective schools from the District Testing Office.

In Seattle Schools, MAT testing is mandatory in the Fall and Spring for all second, fourth, sixth, and eighth grade students. There were discrepancies between the pre-test dates for the even and odd grade Title I students. Even grade students were tested in October, while some odd grade students were not pre-tested until November.

The number of Title I students in Reading programs who were pre-tested with the appropriate form of the MAT was 2,717. Of these students, 2,455 were post-tested in the Spring.

Of the total population of students enrolled in a Title I Math program, 2,047 students were pre-tested with the appropriate form of the MAT in the Fall; 1,814 of these students were post-tested in the Spring.

The following forms of the Metropolitan Achievement Test were used to pre- and post-test Title I students:

Grade 2	Pre	- MAT Primary I
	Post	- MAT Primary II
Grade 3	Pre	- MAT Primary II, Reading and Math
	Post	- MAT Primary II, Reading and Math
Grade 4	Pre	- MAT Elementary
	Post	- MAT Elementary
Grade 5	Pre	- MAT Elementary, Reading and Math
	Post	- MAT Elementary, Reading and Math
Grade 6	Pre	- MAT Intermediate
	Post	- MAT Intermediate
Grade 7	Pre	- MAT Intermediate, Reading and Math
	Post	- MAT Intermediate, Reading and Math
Grade 8	Pre	- MAT Advanced
	Post	- MAT Advanced

Limitations of the Study

While this study was designed to generalize to the total Title I student population in Seattle, there are several qualifications that should be made regarding the population analyzed:

1. Over 5,500 Title I students were identified in the Fall of 1975; approximately 4,500 were pre-tested. Of these, about 4,200 students were post-tested. This represents a reduction in the number of students upon which the conclusions of this report are based.

2. Since the Group Testing policy in Seattle is to test students with the appropriate grade level achievement test, many Title I students who were several years below grade level scored at or below chance level. Even if they attained one or more years' academic growth, this may not be reflected on the post-test. Other possible problems with testing include:

   a. Students had different testing environments. Students in even numbered grades were tested during the regular District test program, while Title I students in odd numbered grades were tested in their Title I classes.

   b. Some teachers scored their students' tests and reported scores in percentiles, stanines, or without students' identification numbers. These formats were not compatible with the District's data handling procedures; therefore, the scores could not be used.

3. When reading the analysis of the Title I population in the non-public school program, two limitations should be kept in mind:

   a. In the Fall of 1975 approximately 280 students were identified in the Title I non-public school program; however, they were not all put on the computerized files. Of those on the file, about 145 students were pre- and post-tested in Reading and approximately 95 in Math. This represents a significant decrease in the non-public school Title I population on which the results were based.

   b. A portion of the socio-economic data for the non-public school program was unobtainable, resulting in: 1) an incomplete description of the population; and 2) analyses based on unadjusted scores.

4. Instructional data for about fifty-four Title I programs were collected by evaluators during observations and program staff interviews. The large number (7) of evaluators and the small number (2) of contacts with the program limit the conclusions drawn from the data. Therefore, the instructional data should be viewed as a description of program-wide trends rather than as a definitive statement of the practices in each Title I program.

5. Due to the fact that the Title I student populations are also target populations for other special programs, caution should be taken in attributing academic success solely to the influence of the Title I program.

APPENDIX B

STUDENT PROGRESS REPORT CARD GRADES SURVEY

Instructions: Please indicate this student's progress report card marks for the first and last marking period of this school year. Use the marks for the specific areas of emphasis listed, and record them according to the following key by circling the appropriate number in the column at the right.

Grading Key

3 = Outstanding, Commendable
2 = Satisfactory
1 = Needs improvement; Needs to make greater effort; Needs more time to develop

Subjects and Areas of Emphasis	
Reading:	
1. Reading with comprehension; Reads with understanding	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
2. Understanding basic reading skills; Learns basic reading skills; Uses word attack skills	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
Mathematics:	
3. Understanding number concepts	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
4. Solving thought problems; Story problems	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
Conduct and Attitudes:	
5. Cooperates willingly	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
6. Refrains from disturbing others	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
Work and Study Habits:	
7. Follows directions	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1
8. Works independently	a. First Marking Period 3 2 1 b. Last Marking Period 3 2 1

APPENDIX C
TITLE I INSTRUCTIONAL INFORMATION

Program _____ School Number ☐☐☐

Teacher _____ Evaluator Name _____

Content Area: (1) Reading (2) Math ☐

Grade Level: (1) Kinder-garten (2) Primary 1-3 (3) Intermediate 4-6 (4) Middle 6-8 (5) Secondary 7-8 ☐

Position of Head Title I Classroom Person:
(1) Totally Title I funded certificated
(2) Partially Title I funded certificated
(3) Title I funded paraprofessional ☐

Class Setting:
(1) Title I self-contained
(2) Title I lab or resource center
(3) Regular classroom ☐

Primary Instructional Approach:
(1) Tutorial
(2) Remedial skills (3) Basic ☐

Students per class: Title I _____ N _____ % of class total ☐☐ ☐☐☐

Non-Title I _____ N _____ % of class total ☐☐ ☐☐☐

Total students per class: ☐☐

Classroom Assistants	Number	Classes Per Day	Days Per Week	Min. Per Class	Total Min. Per Week
Certificated Instructional Assistants					
Non-certificated Instructional Assistants					
Service Aides					
Diagnostic Clinician					
Title I Parent Volunteers					
Other Volunteers					
Peer Tutors					

Student Time Distribution: In an average week, what percentage of time do students spend, on the average, in the following settings:

Large Group (7 or more)	____%
Small Group (2-6) with direct instruction	____%
Individualized Instruction (1 on 1)	____%
Independent work (1 student working alone)	____%
Small Group (2-6) working independently	____%
TOTAL	100 %

Total Minutes per day this Title I class meets _____

Total Days per week this Title I class meets _____

Total Minutes per week _____

Number of students observed _____

Title I
Instructional Information
Page Two

Observed and Estimated Frequency of Use of Instructional Methods:

	Evaluator's Observed Time	Teacher's Estimates Per Week		Frequency	
Oral Teacher Presentations	Min. This Day	Days Per Week	Min. Per Day	E%	T%
Structured Oral Drill (e.g., teacher cues/group responses, individual or group reading aloud)					
Oral question/answer					
Timed Oral Drill					
Written Practice					
Timed written drill					
Problem solving (e.g., manipulative lab activities)					
Audio-Visual exercises					
Silent Reading					
Discussion					
Organizational Time					
Non-Instructional Time					
Motivational Activities					

Materials:

Is students Title I text the same as that used in their regular reading or math class? (1) Yes (2) No (3) Not Applicable (no text used in Title I) /_/

Please estimate the frequency of use of each of the following kinds of materials:

	Evaluator's Observation This Period	Teacher's Estim. Per Week		Frequency		Teacher's Years Experience With Material
	Min. This Day	Days Per Week	Min. Per Day	E%	T%	
Basal Text						
Learning Games						
Workbook Supplem. Text						
Multi-Media Kits						
Library Books						N/A
Audio Tapes/Redords						
Visual Aids: slides, filmstrips, movies						
Manipulatives/lab matls.						
Worksheets		50				N/A
Flashcards						N/A

Non-material Time

Instructional Information
Page Three

☐ Teacher's rating of adequacy of materials available for teaching:
(1) Very Unsatisfactory (2) Unsatisfactory (3) Satisfactory (4) Very Satisfactory

☐ Teacher's rating of adequacy of facilities in Title I classroom:
(1) Very Unsatisfactory (2) Unsatisfactory (3) Satisfactory (4) Very Satisfactory

☐ Teacher uses manual accompanying test:
(1) Seldom or Never (2) Sometimes (3) Often (4) Very Often

☐ Extent of use of Systematic Behavior Modification:
(1) Seldom or Never (2) Sometimes (3) Often (4) Very Often

☐ Extent of use of Teacher Made Materials:
(1) Seldom or Never (2) Sometimes (3) Often (4) Very Often

☐ DISTAR:
(1) Yes (2) No

Observed Staff = ☐

Observed Classroom Interaction	Tally	Frequency
Staff/Whole group interaction		
Staff/small group interaction		
Staff/individual student interaction		% Per Student
Student/student interaction		

Total = _____

Selection of Activities	Evaluator's Observation This Period	Teacher's Estimate Per Week
Proportion of student activities that staff suggest and direct	_____ %	_____ %
Proportion of student activities that students choose themselves	_____ %	_____ %
TOTAL:	100 %	100 %

Indicate which, if any, of the following are a regular part of your program and/or record-keeping:

Diagnostic/Prescriptive

Individual Diagnostic test scores _____

Listings of small group or individual skills deficits _____

Written small group or individual learning objectives _____

Precision Measurement _____

Ongoing Skills Assessment

Written Records of Individual Objective Attainment:

a. Skills test or quiz scores _____
b. Skills graphs _____
c. Performance on daily or weekly timed drills (logs) _____
d. Performance on worksheet and/or workbook exercises _____

Individualization:

a. Variety of materials and resources in use _____
b. Different students/groups of students working at different tasks or levels _____
c. Comprehensive individual learning plans in use (test data, skills deficits, objectives, etc.) _____
d. Learning Contracts _____

Teacher's estimates of frequency of contact with the following people concerning Title I program:

							N/A
Individual Parents:	Never	Once a Year	Once a Semester or Trimester	Quarterly or mid-trimester	Monthly	Every 2 weeks or more	
Parent Advisory Committee:	Never	Once a Year	Once a Semester or Trimester	Quarterly or mid-trimester	Monthly	Every 2 weeks or more	
Office of Compensatory Programs:	Never	Once a Year	Once a Semester or Trimester	Quarterly or mid-trimester	Monthly	Every 2 weeks or more	

Regular Classroom Teacher	Once a Semester or Trimester	Quarterly or mid-trimester	Monthly	Every 2 Weeks	Weekly	More than once a week
Principal	Once a Semester or Trimester	Quarterly or mid-trimester	Monthly	Every 2 Weeks	Weekly	More than once a week
Program Manager						

Teacher Background and Experience:

Total years' teaching experience _____

Total years' Title I teaching experience _____

Total Years' Title I experience in present building _____

Reason for present assignment to Title I _____ Requested _____ Encouraged _____ Assigned

Highest Degree earned:

(1) A.A.; (2) B.A.; (3) B.A. + 22½; (4) B.A. + 45; (5) B.A. + 90; (6) B.A. + 135; (7) B.A. + 45 + M.A.; (8) B.A. + 90 + M.A.; (9) B.A. + 135 + M.A.; (10) B.A. + 135 + M.A. + Ph.D./Ed.D.

Has the teacher completed graduate courses specifically related to:

	Yes	No
Psychology and child development		
Reading methods		
Math Methods		
Individualized instruction		
Remedial Education		
Special Education		

Has the teacher completed District inservice courses in: (Not OCP)

Reading methods		
Math methods		
Individualized instruction		
Remedial education		
Special education		
Precision Measurement		

Number of 1975-76 OCP monthly workshops attended by:	0	1-2	3-4	5-6	Workshop*
Teacher					
Instructional Assistant					
Instructional Assistant					
Clerical Aide					
Number of building in-service training sessions held this year					
Number of staff in-service training sessions					

* Refers to 2-week OCP workshop

Definition of Instructional Variables

Following are definitions of variables from the preceding form that are not self-explanatory:

Page One

The contents on this page are completely self-explanatory.

Page Two

Oral Teacher Presentations: Teacher talking to/at the students, either in a whole group or small group setting. Both formal lectures and any explanations of material.

Structured Oral Drill: Exercises requiring students individually or as a group to repeat or practice aloud material structured by the teacher or text. Included exercises in which students read aloud - either word lists or paragraphs; use of flashcards; identification of letters or numbers and sounds and practice in repeating them.

Oral Question/Answer: Loosely structured exercises, such as comprehension questions following Reading; questions about the meaning of Math concepts or letter-sound relationships; vocabulary; conversations about students' interests and activities. If the teacher was asking for a fact, it was listed here; if asking for opinion, it was listed under Discussion.

Timed Oral Drill: Stopwatch exercises in which students read numbers, letters, words or sentences/paragraphs aloud.

Written Practice: Paper and pencil exercises such as Math computation, students' making their own flashcards for practice, workbook activities focusing on isolated skills such as letter, sound, word or number recognition and manipulation. Included time spent correcting exercises or homework in class. Also, loosely structured written exercises requiring students to fashion a substantial part of the answers themselves. Included time spent correcting answers in class.

Timed Written Drill: Stopwatch exercises - Math facts worksheets, word or letter recognitions, production exercises.

Problem Solving: Students worked with counters, shapes, and/or other manipulative objects designed to reinforce abstract concepts.

Audio-Visual Exercises: Drill or activities requiring use of audio-visual stimuli.

Organizational Time: Time spent handing out papers, changing stations, etc.

Non-Instructional Time: Time spent in activities other than teaching; "goofing off" time.

Motivational Time: Time spent in motivational activities of any kind - whether it was keeping up records for a well defined system, or just handing out some kind of reward.

Learning Games: Games with set rules or procedures.

Multi-Media: Materials that used at least two stimuli simultaneously.

Frequencies were computed for both sections on this page. The frequencies were figured two ways: 1) Based on the evaluator's observation, resulting in an evaluator's estimated percent of time spent in each area (E%). 2) Based on how the teacher thought time was spent on an average day, resulting in a teacher's estimated percent of time spent in each area (T%).

Page Three

Systematic Behavior Modification Other Than Distar: Some teachers use a very regular system of verbal praise, reward activities, and other formal techniques of modifying student behavior as part of their daily or weekly lessons. If a strict system was used, it should have been marked here.

Distar: A systematic sequence of teacher cues (verbal and hand) and group choral responses designed to drill students on reading and/or math skills. Teachers must have been trained to use the system.

Observed Classroom Interaction: During the class period, the evaluators chose two 5-minute segments spaced at least ten minutes apart. During each 5-minute period, they kept a running tally of the kinds of interaction observed.

Observed Staff: Number of staff persons that were in the classroom during the time that interactions were being counted.

Percent Per Student: An average percent of interactions each student would receive in that class.

Regarding the record keeping section, indications were made on the form as to whether or not records were kept - no reference was made as to the quantity or quality of the records.

Precision Measurement (Precision Teaching): Systematic daily or weekly timed exercises of letter, word, or number recognition or production. Exercises are sequential and students' progress is charted according to "movement cycles". Teachers must have been trained to use the system. Diagnosis is based on previous performance, i.e., acceleration.

The last four items on this page, labeled "Individualization" were checked if they were observed during the class hour.

Learning Contracts: A fairly formal agreement between teacher and student concerning specific tasks which the student is to complete. Usually by a designated date for a designated reward (points, a free activity, etc.).

Page Four

Teacher Background and Experience: The current year was counted as one year.

APPENDIX D

Combination of Variables That Make Up the Instructional Strategies

The following variables were combined and an average score was computed to represent each instructional strategy:

A. Audio-Visual Material

1. Evaluator's estimated percent of time spent with audio-type materials.
2. Teacher's estimated percent of time spent with audio-type materials.
3. Evaluator's estimated percent of time spent with visual materials.
4. Teacher's estimated percent of time spent with visual materials.
5. Evaluator's estimated percent of time spent with multi-media kits.
6. Teacher's estimated percent of time spent with multi-media kits.

B. Audio-Visual Time

1. Evaluator's estimated percent of time in audio-visual exercises.
2. Teacher's estimated percent of time in audio-visual exercises.

C. Contract

1. Are learning contracts used in the program?

D. Diagnostic/Prescriptive

1. Individual diagnostic test score records.
2. Listings of small group or individual skills deficits.
3. Written small group or individual learning.

E. Individualization

1. Are a variety of materials and resources in use in the program?

2. Are different students or groups of students working at different tasks or levels?

3. Are comprehensive individual learning plans in use?

4. Percent of staff interactions per student.

5. Percent of time students spent in an individualized instruction setting.

F. Integration

1. Class setting.

2. Percent of non-Title I students in the class.

3. Total minutes per week peer tutors are working in the class.

4. Is the Title I class using the same text as the regular class?

G. Non-Instructional Time

1. Evaluator's estimated percent of time in organizational time.

2. Teacher's estimated percent of time in organizational time.

3. Evaluator's estimated percent of time in non-instructional time.

4. Teacher's estimated percent of time in non-instructional time.

H. Non-Material Time

1. Evaluator's estimated percent of time spent in activities that do not use materials.

2. Teacher's estimated percent of time spent in activities that do not use materials.

I. On-Going Assessment

1. Record keeping of skill tests or quiz scores.

2. Record keeping of skill graphs.

3. Record keeping of performance on daily or weekly timed drills.

4. Record keeping of performance on worksheet and/or workbook exercises.

J. Parent Involvement

1. Teacher's estimated frequency of contact with individual parents.

2. Teacher's estimated frequency of contact with Parent Advisory Committee.

3. Number of Title I parent volunteers involved in the program.

K. Precision Measurement

1. Evaluator's estimated percent of time spent in timed written drill.

2. Teacher's estimated percent of time spent in timed written drill.

3. Evaluator's estimated percent of time spent in timed oral drill.

4. Teacher's estimated percent of time spent in timed oral drill.

5. Precision Measurement Instruction incorporated into the program on a regular basis.

6. Record keeping of skill graphs.

7. Record keeping of performance on daily or weekly timed drills (logs).

L. Printed Material

1. Evaluator's estimated percent of time using the basal text.

2. Teacher's estimated percent of time using the basal text.

3. Evaluator's estimated percent of time using workbooks.

4. Teacher's estimated percent of time using workbooks.

5. Evaluator's estimated percent of time using library books.

6. Teacher's estimated percent of time using library books.

7. Evaluator's estimated percent of time using worksheets.

8. Teacher's estimated percent of time using worksheets.

9. Evaluator's estimated percent of time using flashcards.

10. Teacher's estimated percent of time using flashcards.

11. Evaluator's estimated percent of time working with learning games.

12. Teacher's estimated percent of time working with learning games.

13. Evaluator's estimated percent of time working with manipulatives or lab materials.

14. Teacher's estimated percent of time working with manipulatives or lab materials.

M. Self-Practice

1. Evaluator's estimated percent of time in written practice.

2. Teacher's estimated percent of time in written practice.

3. Evaluator's estimated percent of time in silent reading.

4. Teacher's estimated percent of time in silent reading.

N. Structured Drill or Presentation

1. Evaluator's estimated percent of time in oral teacher presentation.

2. Teacher's estimated percent of time in oral teacher presentation.

3. Evaluator's estimated percent of time in structured oral drill.

4. Teacher's estimated percent of time in structured oral drill.

5. Evaluator's estimated percent of time in timed oral drill.

6. Teacher's estimated percent of time in timed oral drill.

7. Evaluator's estimated percent of time in timed written drill.

8. Teacher's estimated percent of time in timed written drill.

APPENDIX E

TITLE I CLASS LIST

SCHOOL NAME _____ _____ TITLE I TEACHER _____
Grade _____ (Name)

School Code / / / / Social Security Number / / / / / / / / / /

Type or Print Legibly Student Name (Last Name First, Alphabetically)	Student I.D. No.	Check the Appropriate Box for the Title I Subject Taught Each Student			
		Reading Only	Math Only	Reading & Math	Other Specify